

ABSTRACT OF THE DISCLOSURE

A perpendicular magnetic recording medium is formed of a soft magnetic layer, an anti-ferromagnetic layer, a magnetic recording layer, a protective layer, and a liquid lubricant layer deposited in that order on a non-magnetic substrate. The anti-ferromagnetic layer is a Mn alloy containing at least Co at 10 atomic % or greater and 50 atomic % or less or a Mn alloy containing at least Ir at 10 atomic % or greater and 30 atomic % or less. A radial magnetic field is applied during formation of the anti-ferromagnetic layer and the soft magnetic layer. Exchange coupling with the anti-ferromagnetic layer controls magnetic domain walls of the soft magnetic layer. The need for heat treatment after film formation is eliminated.